



Foreign Comparative Testing (FCT)

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Why Foreign Comparative Test?

“When budgets are tight we need to reach out and work with our partners”

-- HON Frank Kendall, USD Acquisition, Technology and Logistics
(COMDEF, Sep 2013)

“As funding decreases across the department, the need for international collaboration increases”

-- Al Shaffer, ASD Research and Engineering
(COMDEF, Sep 2013)

FCT → Partnerships, Affordability, Innovation, Interoperability, Value



FCT Mission



Mission: Find, Assess & Field World-Class Products to Enhance Military Capabilities and Provide Long-Term Value

- ***“Here & Now” Solutions – Procure Capabilities***
 - ✓ Mature Technology - Short Timeline
- ***Support DoD Acquisition Policy & United States Code Title 10***
 - ✓ Promotes Competition
- ***Services & USSOCOM Execute***
 - ✓ Nominate Mature Military or Commercial Products
 - ✓ Conduct Assessments & Fielding
- ***Office of Secretary of Defense Selects & Funds***
 - ✓ Focus on Interoperability & Affordability



Overview



- **Strategic Framework**
- **What is FCT**
- **Where FCT is Going in FY15 and Beyond**
- **Focus and Thrust Areas**
- **How You Can Participate**
- **Contacts**

FCT is evolving to broaden look at technologies and increase means for foreign participation to align with a changing strategic environment



Executing DoD Strategy



Acquisition,
Technology
and Logistics



Support the
Warfighter

Achieve
Affordable
Programs

Strengthen
Partner
Capacity

Research
and
Engineering



Mitigate emerging
threats

Affordably Enable
New or Extend
Existing Capability

Develop Technical
Surprise

Rapid
Fielding
Directorate



Counter Emerging
Threats

Enhance
Interoperability

Enable New
Capability
Affordably

Comparative
Technology
Office



Where can we
partner with friends
and allies for
affordable options?



Why Foreign Comparative Test?



- The U.S. doesn't have a monopoly on good ideas
- Foreign Comparative Test (FCT):
 - Enhances interoperability
 - Creates and strengthens partnerships
 - Enables affordability
 - Harvests global innovation
 - Provides world class products to improve military capabilities

“We need to encourage international competition”

HON Frank Kendall, USD Acquisition, Technology and Logistics

(COMDEF, Sep 2013)



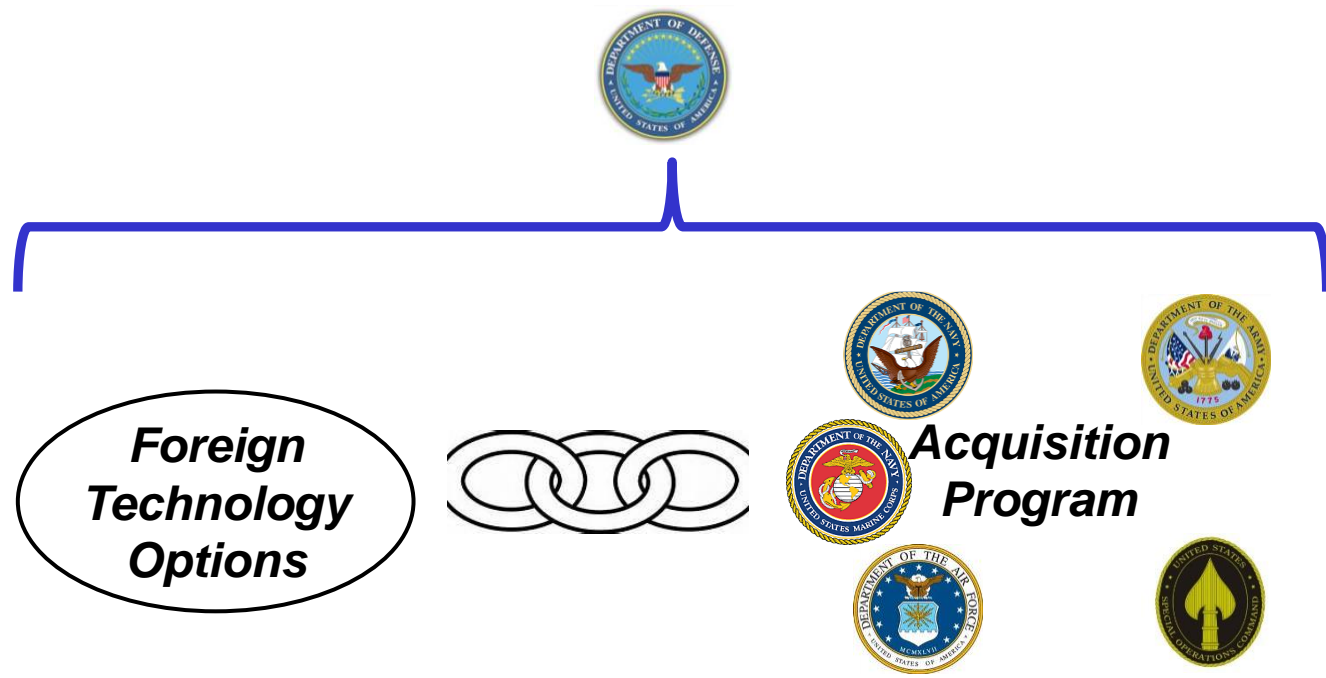
DoD Programs Comparison

Build relationships	Cooperative Development			Integration of systems	Test to Procure	Test interoperability
Science and Technology (S&T) Grants	Coalition Warfare Program (CWP)	Nunn/ Service NATO Research and Development	Other	Joint Capability Technology Demonstrations (JCTD)	Foreign Comparative Testing (FCT)	Joint Test and Evaluation (JT&E)
Provides financial support to foreign partners to promote S&T cooperation <ul style="list-style-type: none"> International workshops and/or conferences Visiting scientists Short-term visits of international scientists Competitive and non-competitive processes 	Provides 1-2 years of seed funding to DoD organizations that conduct cooperative RDT&E projects with foreign partners <u>Goal:</u> <ul style="list-style-type: none"> Increase capability through advanced capabilities, improved interoperability, and strengthened partnerships Annual competitive process 	Provide seed funding to DoD organizations to conduct cooperative RDT&E projects with foreign partners <u>Goal:</u> Encourage cooperative RDT&E to increase DoD and partner capabilities <ul style="list-style-type: none"> AF selects project competitively; Army and Navy non-competitive 	TRANSCOM and SOCOM also have RDT&E funding that can be used for projects with international partners <u>Goal:</u> Support specific goals identified by organization <ul style="list-style-type: none"> TRANSCOM process is competitive 	Provides support funding to DoD orgs to demonstrate the best operational concepts & technology solutions for transformational, joint, and coalition warfare <u>Goal:</u> Rapidly develop, assess, and transition needed capabilities to DoD forces <ul style="list-style-type: none"> Bi-annual competitive process 	Provides funds for minor modifications and then full test of a foreign product with intent to procure for DoD <u>Goal:</u> Find, assess, and field world-class products to enhance military capabilities <ul style="list-style-type: none"> Competitive annual process to find, assess, and field world class products to enhance military capabilities 	Assesses Service interoperability in joint operations, and explore potential solutions to identified problems <u>Goal:</u> Provide non-materiel solutions to solve joint operational issues <ul style="list-style-type: none"> Annual competitive process
Army: ITC/FAST Air Force: AFOSR Navy: ONR/ ONR-G	OUSD AT&L/ International Cooperation	Army – DASA(DE&C) Navy – NIPO AF – SAF/IAPQ	SOCOM (SORDAC) TRANSCOM (J5/8)	OUSD AT&L/R&E/ Rapid Fielding	OUSD AT&L/R&E/ Rapid Fielding	OSD DOT&E

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FCT Strategy



Link foreign technology options that address ASD (R&E) priority areas to Service/SOCOM program managers



The Search for the World's Best

To Date Have Partnered with 31 Countries



Discussions Also Conducted with Argentina, Brazil, Bulgaria, Slovakia, & Turkey

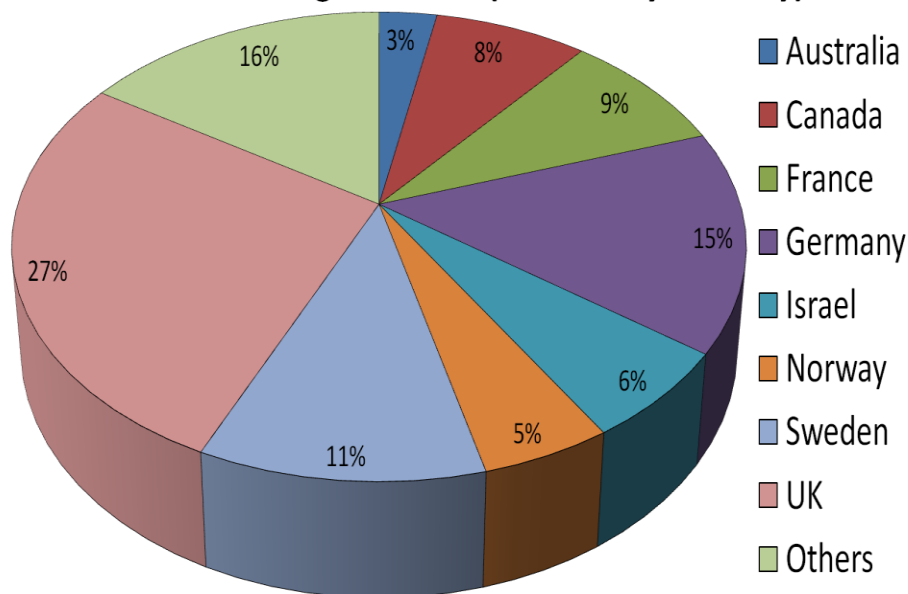


Assessing & Getting Technology to the Fight

By Country (FY 1980 – 2014)

FCT Funding Provided - \$1.23 Billion (Percent by Country)

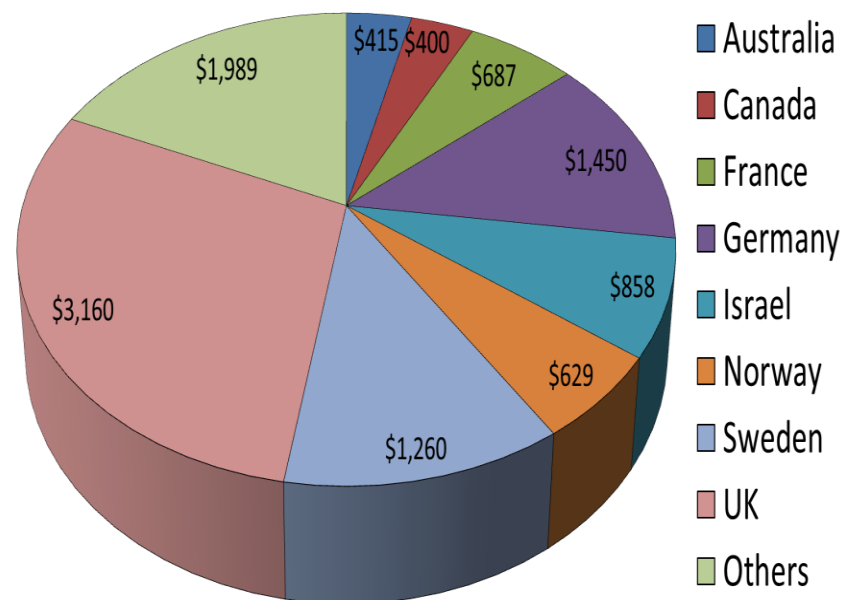
FCT Funding Provided (Percent by Country)



* Others -- Austria, Belgium, Croatia, Czech Republic, Denmark, Finland, Greece, Iceland, India, Italy, Japan, Netherlands, New Zealand, Poland, Republic of Korea, Russia, Singapore, Spain, South Africa, Switzerland, Taiwan, Ukraine

Procurements - \$10.9 Billion (by Country)

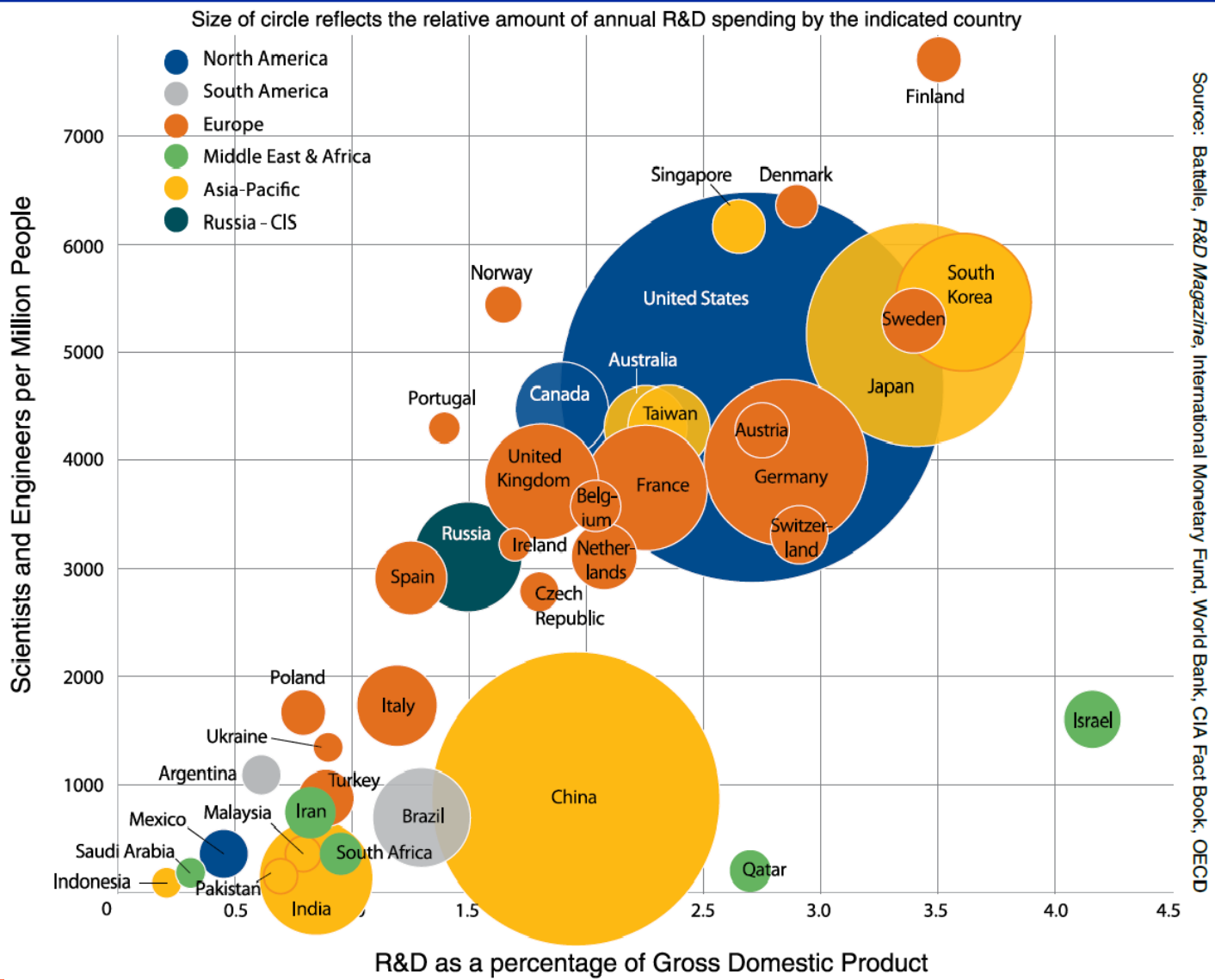
FCT Procurements (in millions of dollars)



** Others -- Belgium, Denmark, Finland, India, Italy, Japan, Netherlands, New Zealand, Poland, Republic of Korea, Russia, South Africa, Switzerland



International R&D Spending Foreign Technology Solutions





Innovation

New Process, New Approach or Concept, New Material



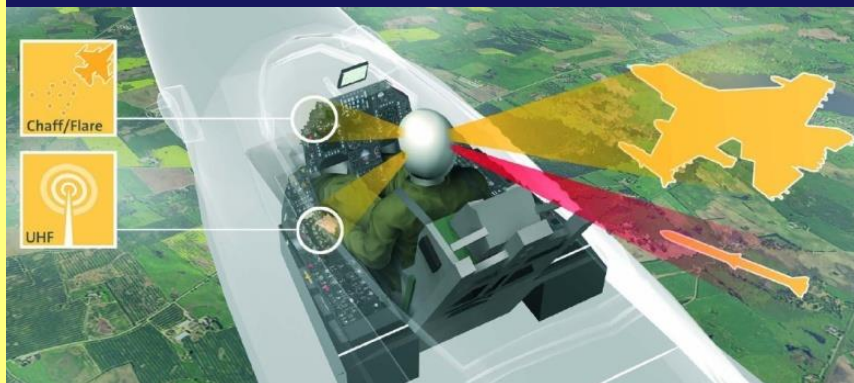
**More resilient, corrosion resistant,
and weldable alloy**

**Operations & Sustainment
Avoidance \$1.2B**

**Manufacturing Avoidance of \$31.7M
(\$18.4M Contract Corus, Germany)**



3D Audio / Active Noise Reduction

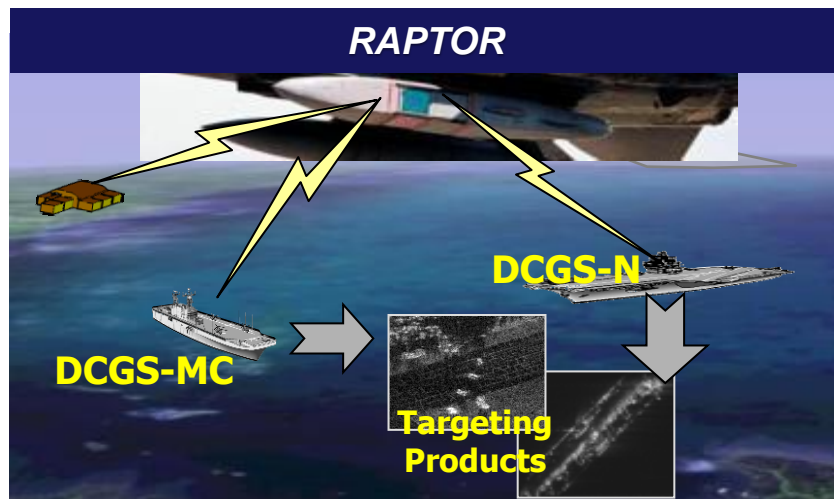


**Provides audio cue from source
direction for improved SA**

**RDT&E Avoidance \$5.1M
Fielding Reduction – 5+ years
(Terma Airborne Systems, Denmark)**

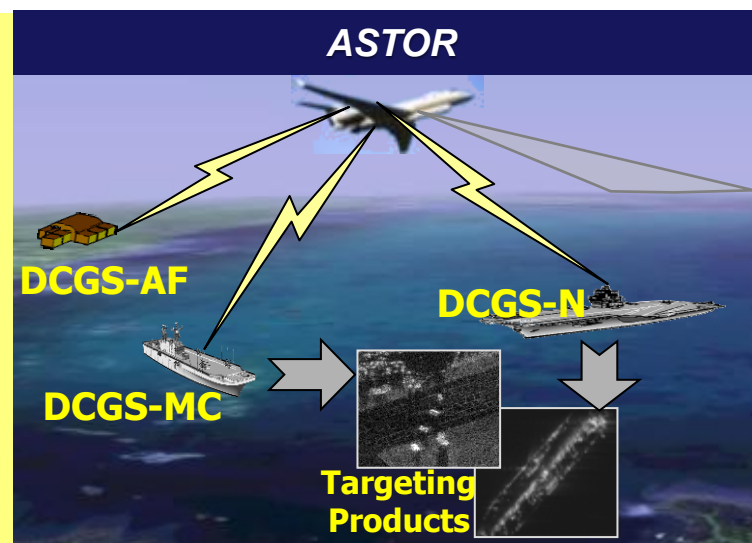


Interoperability



Enables US Distributed Common Ground System (DCGS) units to download stand-off electro-optic and infrared imagery collected by the Reconnaissance Airborne Pod TORnado (RAPTOR) pod on UK Tornado GR4 aircraft

Enables US Distributed Common Ground System (DCGS) units to download Synthetic Aperture Radar/Ground Moving Target Indication imagery collected by the Airborne STand-Off Radar (ASTOR) system on UK Sentinel aircraft





Value

**Lower Life Cycle Cost, Multi-role, Reduced Man hours,
Decreased Logistics Footprint**



Digital Flight Control System EA-6B

**Replaced analog flight controls
with digital system that increased
Mean Flying Hours Between
Failure from 83 to 3417 (measured)
= Operations & Sustainment
Avoidance \$68M
(\$10M Contract BAE Systems, UK)**

**Provides capabilities of 4
separate rounds in one for less
cost and logistics burden
(USMC & Rheinmetall, Germany)**

120mm Multi-Purpose High Explosive Rounds





Measuring Progress

~ Last 34 Years ~



- **OSD investment: \$1.23 Billion (constant FY14 \$)**
 - **Led to procurements for 271 projects worth \$10.9B**
- **Accelerated fielding averages 2-4 years**
- **Led to foreign vendor teaming with U.S. industry in 34 states for roughly 30% of the projects procured**



FCT IN FY15 AND BEYOND



FCT for FY15+

- **Goal – work with international partners to affordably address future challenges or solutions to operational needs**
- **Vision – Be widely recognized within DoD as a resource for foreign technology solutions, and be recognized by foreign industry as an entry point to DoD**

Execution

Widen technology readiness spectrum considered by FCT program

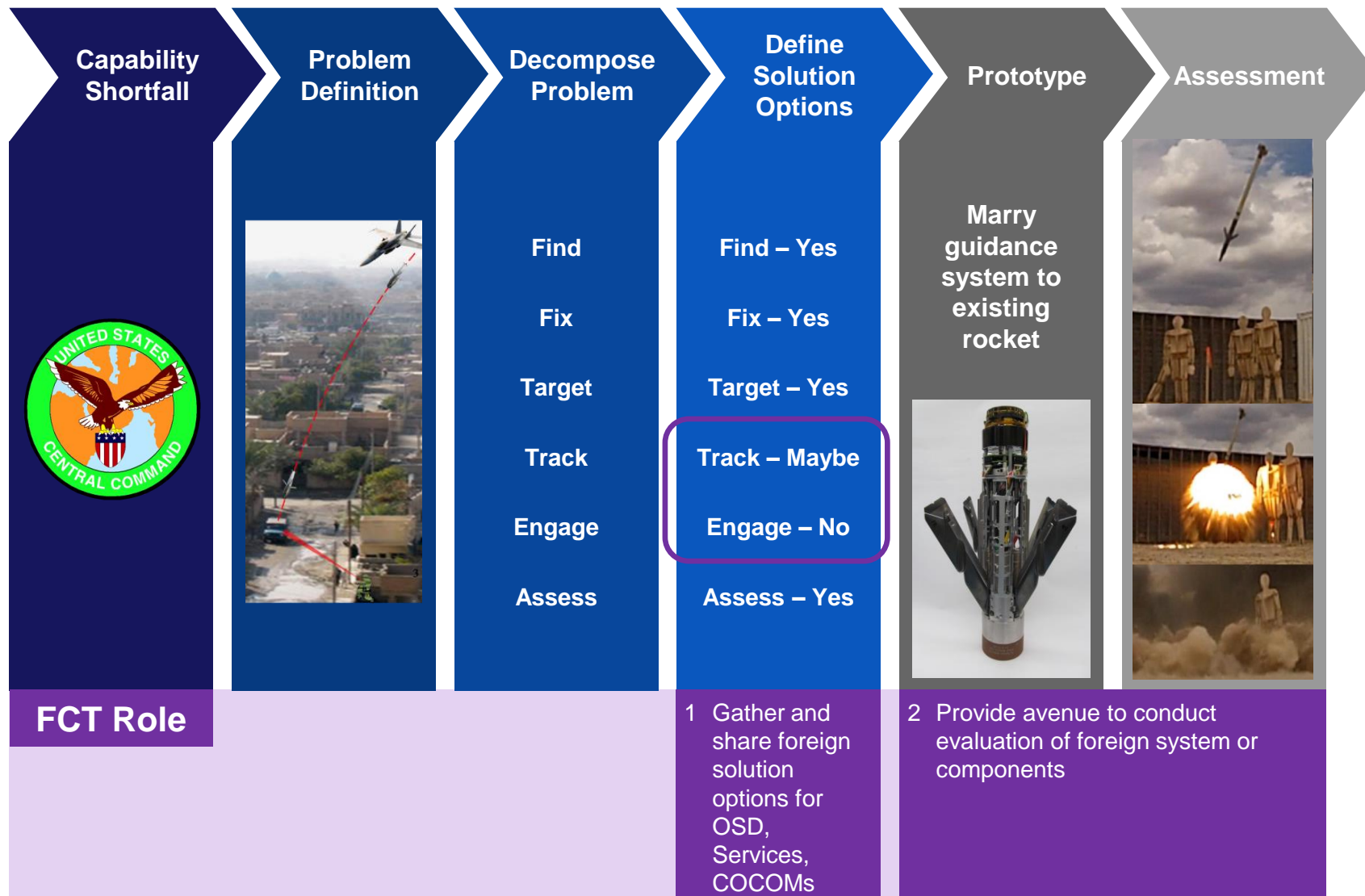
Increase foreign participation and strengthen partner capacity with an emphasis on cost sharing

Gather information on foreign technology options



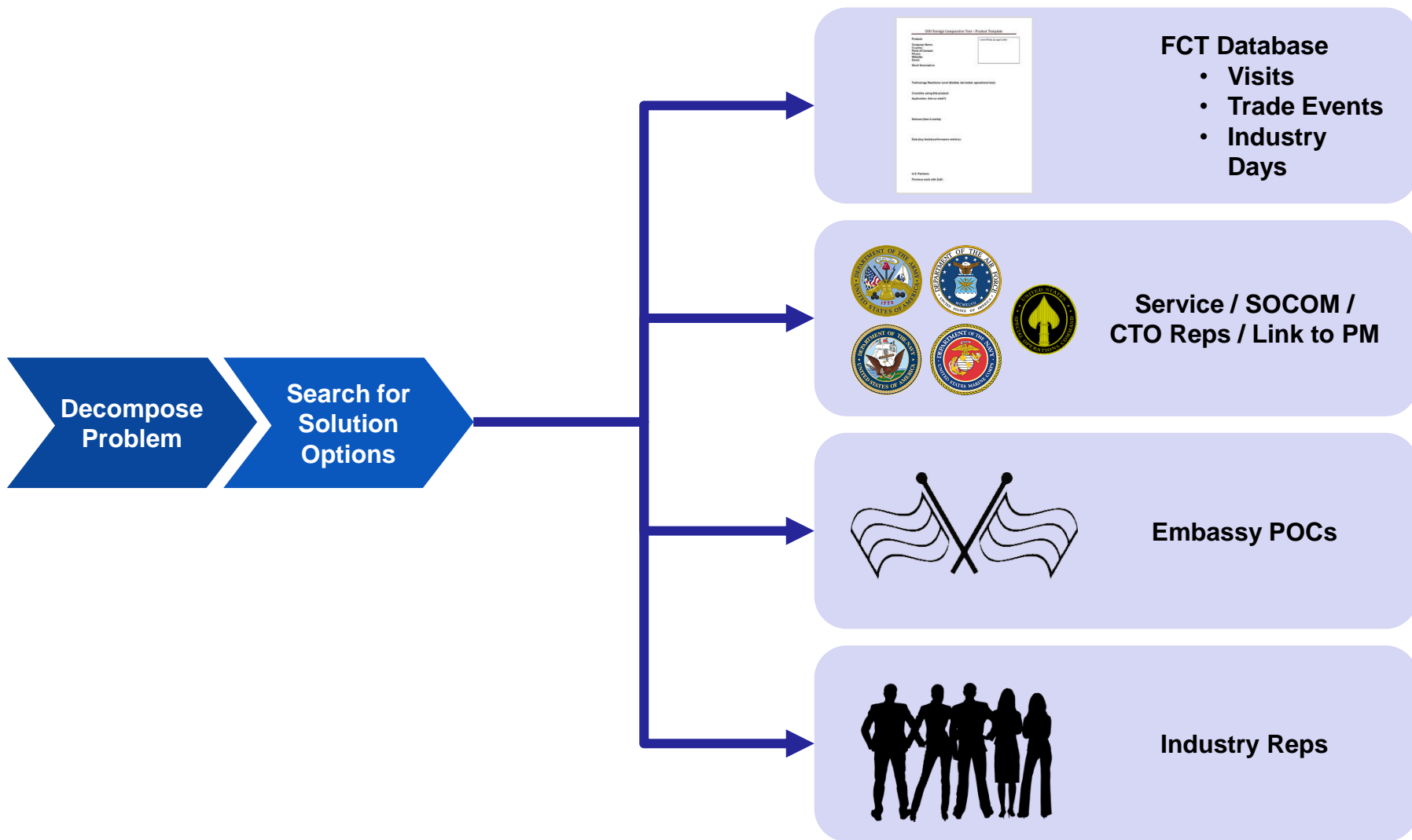
Prototyping Methodology

FCT Role - US Gov't to Foreign Industry





FCT Information Gathering Resources





Product Template

Product Template

- Product
- Company Name
- Country
- POC Information
- Website
- TRL
- Countries Using
- Application (So What?)
- Science (How it works)
- Data (key performance metrics)
- US Partners
- Previous Work w/ DoD

OSD Foreign Comparative Test – Product Template

Product: XX mm High Velocity (HV) Airburst Munitions System (ABMS)

Company Name: Advanced Systems (AS)

Country: Republic of Antarctica

Point of Contact: Mr. Jones

Phone: (555) 555-5555

Website: www.abcd.com

Email: abcd@abcd.com



Short Description: The HV ABMS consists of a Fire Control System, an Ammunition Programmer and XX x XX mm Air Burst Munitions. High explosive, Flash and Bang, Counter defilade, increased lethality, improved accuracy.

Technology Readiness Level (fielded, lab tested, operational test): TRL: 9 The HV ABMS is qualified and in production.

Countries using the technology: Madagascar, Dominican Republic, Greenland, etc.

Application: (the so what?) The HV ABM is specially designed to allow soldiers to effectively engage enemies in defilade and to provide improved accuracy and higher lethality through a technologically improved muzzle velocity compensation capability.

Science (how it works): Muzzle velocity compensation for the immediate round fired. The 40mm HV ABMS is an upgrade kit to existing launchers to provide Air Bursting Precision capability. The FCS accurately lazes the target and the ballistic card computes the time to burst. The computed time to burst based on the measured velocity is programmed into the fuze only upon exit at the ammunition programmer. Enhanced safety with its built-in self-destruct mode and gives ABM the ability to function as a point detonating HE cartridge as well as an Air-Burst cartridge.

Data:

- Grenade Length: XX mm • Weight: XXX gm
- Muzzle Velocity: XXX m/s • Maximum Range: XXXX m
- Lethal Radius: X m • Arming Distance: XX to XX m
- Fuze Type: Programmable Time Fuze

U.S. Partner: AS does not currently have a relationship with a US company.

Previous work with DoD: Technology developed through US DoD laboratory funding.



FCT Evaluation Options

**Developmental
Prototype**



**Operational
Prototype**



Qualification Test



Assessment

**Transition/
Procurement**

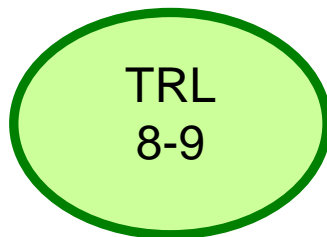
FCT Projects Can Be Side-by-Side Comparative Evaluations



FCT – Widen Technology Focus

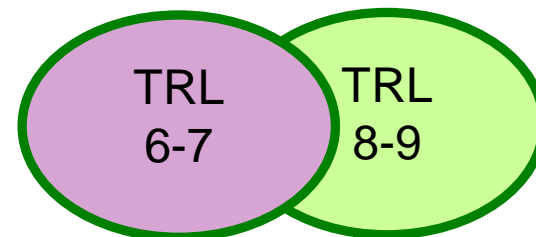


<FY14



What can we
procure and
rapidly field for
today's
requirements?

FY15+



What solutions
can we provide for
tomorrow?

FY15+ Will Look at Both Mature Fielded Technology
and Technology Ready for Testing in an Operational Environment



Looking to FY 2015 FCT Focus Areas



SOURCE: Evolving AT&L, R&E, & Combatant Command Priorities

1. Interoperability

- Facilitate more efficient and effective coalition operations
- Enable systems to work with coalition partners
- Improve coalition data sharing

2. Affordability

- Reduce operations and maintenance cost / shrink logistics footprint
- Extend system service life
- Better leverage training systems

3. Counter emerging threats and meet needs across domains

- Operating in extreme and denied environments (Arctic, A2/AD)
- Enhanced soldier performance (human systems, reduce soldier load)
- Autonomous systems/Counters to those systems (UXVs)
- Force Application (kinetic, non-kinetic)



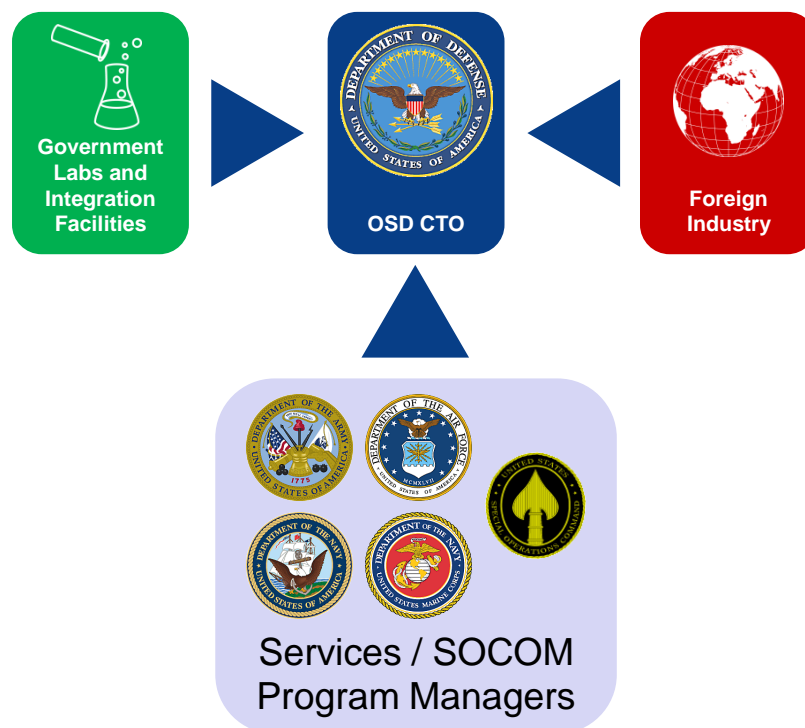
FCT – Proposal Process to Increase Participation



FY14



FY15+



FY15+ Process Will Allow Additional Proposals to Address Thrust Areas



FCT Primary Thrust Areas for Prototyping for 2015



- **Interoperability**
 - Technology that enables coalition systems to train / employ together effectively (Modular Open System Architecture)
- **Technologies to Operate in Arctic Environment**
 - Power systems for extreme cold
 - Cold weather resilient systems
- **Force Protection**
 - Innovative systems that can be added to existing platforms to defeat emerging threats



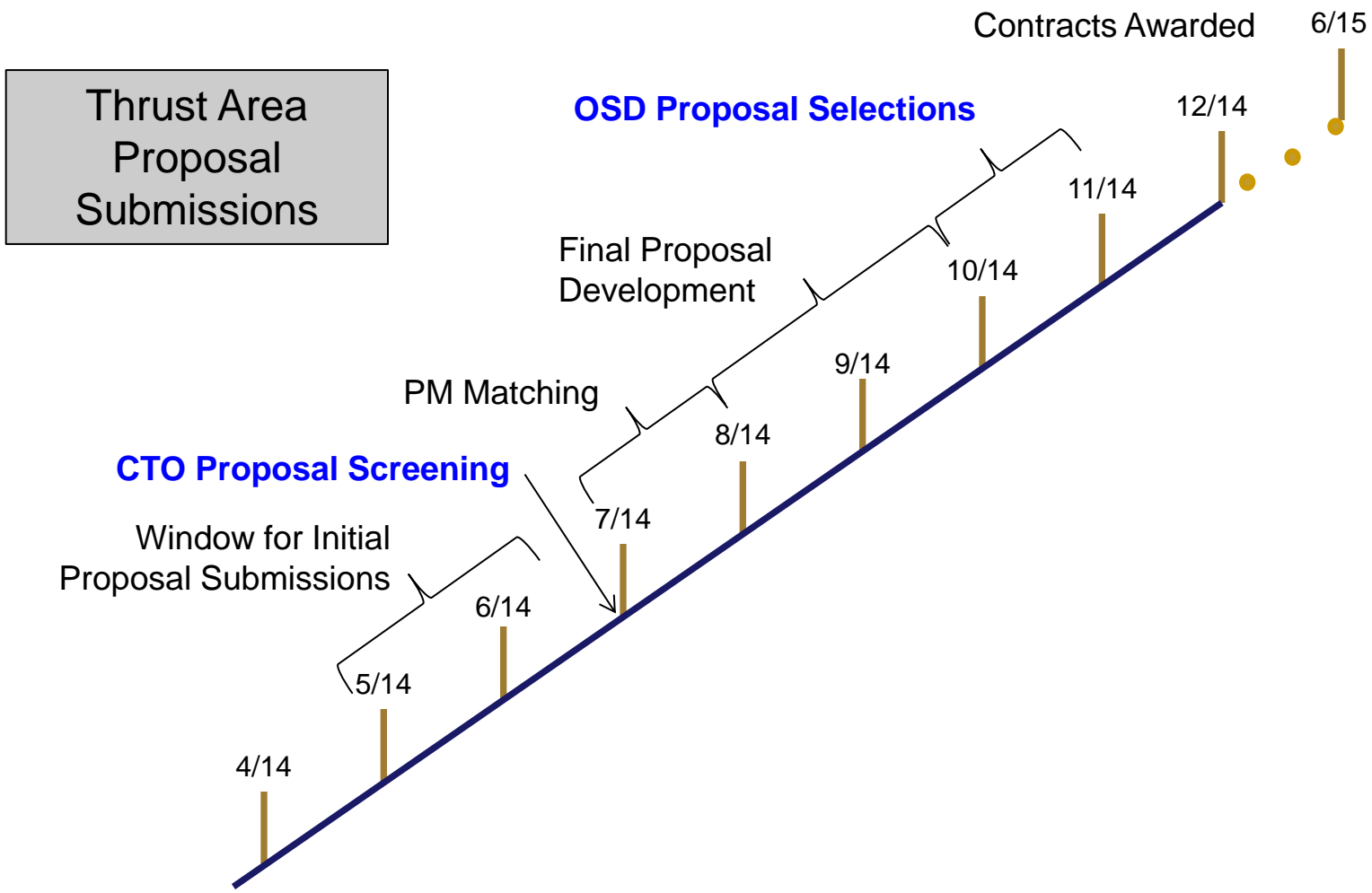
FCT Secondary Thrust Areas for Prototyping



- **Counter Unmanned Aerial Systems**
 - Small affordable technology to counter micro and mini UAS
- **Counter Weapons of Mass Destruction**
 - NBC detectors; small / durable / automated
 - Chem-Bio Filter / decontamination new approaches / affordable
- **Technologies to Operate in Denied Access to Space**
 - Over the horizon data transfer
 - Precision navigation and timing with no Global Positioning System
- **Electronic Warfare**
 - Digital Radio Frequency Modulator or other technologies that can provide affordable enhancement to existing systems



FY15 FCT Proposal Timeline





Initial Proposal – Required Inputs



- **Project Description**
- **Candidate Items to be Evaluated or Tested**
 - Company Name, Location, Point of Contact, and US Teaming Arrangement
 - Item Name, Where Used, Technology Readiness Level, and Unit Cost
- **DoD Focus/Thrust Area Addressed**
- **Cost Avoidance**
 - Research Development Test & Evaluation
- **Intellectual Property Rights**
- **Financial Information**
 - Cost Sharing
- **Test and Evaluation Information**
 - Test Data, Test Articles
- **Transition Strategy**
- **Quad Chart**



How to Get More Info

- **This briefing -- <http://www.acq.osd.mil/rfd/index.html>**
 - Access the Rapid Fielding website for briefing on Comparative Technology Office Foreign Comparative Testing Program (under “Resource” tab)
- **Proposal Submission -- <https://cto.acqcenter.com/osd/portal.nsf/>**
 - Registration required for submission
 - Additional background information on FCT and thrust area topics
- **Contact your Embassy in DC – Defense Attaché or the trade or science and technology organization**
- **Contact the Office of Defense Cooperation / Attachés in the US Embassy in your country**
- **Contact us directly – either the main office or Service/SOCOM specific contacts given in this brief**



Key Points of Contact

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